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August 23, 2001	Forest Resource Group	Added Server Designations, local site Links, and Full Name Designation
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Forward

An evolution has taken place in the minds of the Windows 2000 Development Group. We have gone from thinking in terms of Information System islands separated by agency identifiers to the concept that the State of Washington is a single organization.

It all started with the interconnection of our MS-Mail and Exchange mail systems. We got used to the convenience of simply using a global address list for lookup to send email instantly to any of the 50,000 recipients connected to the hub.

In a similar way we have found that we can publish all network resources into a multi-agency, single forest, Global Catalog that will allow us to simply and easily connect to any resource in the Forest we have permissions to use.

Until now, individual agencies have thought about their internal local area networks (LANs) to be their sphere of common applications and resource sharing. "There is no business case for our networks to be connected. We don't share applications with other agencies."

Now we see that the State of Washington has a Personnel Department that interacts with each agency sharing information during the hiring, promoting, and retiring of state employees. We have an Office of Financial Management with which, each agency interacts, for their budget information and authorization. We have a Department of General Administration that interacts many times a day with each agency, working with Facilities, Procurement, Commodity Redistribution, and Transportation Services. We have a Department of Information Services that provides telephone services, batch data processing, information system policies, and secure digital certificates of identity. All of which every agency interacts with, at any moment, out of every business day.

The State of Washington is a single organization. Our islands of locally connected networks were based on great technology, but, it is time to move ahead, interconnect our LANs, provide a common enterprise model of administration, and publish the resources we each need from each other in a convenient, secure, and efficient way.

Migration to New Names

The technology exists to do an in place upgrade of an existing NT 4.0 domain structure to Windows 2000. Objects will retain their present names after the in place upgrade. To comply with the new naming conventions, changes have to occur manually. This might be a practical task in a domain that has fewer than one hundred (100) users and a typical amount of additional objects (printers, file shares, resources, etc.). To larger organizations the thought of renaming every resource in the existing NT 4.0 domains seems like a rather large task, overwhelming to say the least.

For larger state agencies involved in the design and implementation of the multi-agency forest, a more practical approach is a gradual **migration** to Windows 2000 Active Directory. The approach is to bring up a parallel Windows 2000 domain environment, create explicit trusts to the NT 4 environment as needed, and migrate domains, workgroups, individual users, or application servers over time.

After the infrastructure is in place (including the forest root, policies and procedures, standards, etc.) the actual migration could take place along the normal hardware and software attrition and refresh cycles. As workstations, users, printers, and servers are replaced due to function change, hardware updates, reorganizations, etc. new resources can be connected to the Windows 2000 network. Renaming then becomes the simple task of naming in the first place.

The State of Washington will be using and managing NT 4 networks for some time. The time critical issue is to properly establish the root infrastructure for those agencies that would like to move ahead to Windows 2000 Active Directory right away.

Table of Contents

Executive Summary

Introduction

Windows 2000 deployment at the State of Washington begins with Active Directory planning, and the planning starts with the creation of naming conventions and appropriate standards.

Background

The Windows 2000 Development Group derived these naming conventions and standards after many hours of deliberation. This Development Group is comprised of 15 Senior Enterprise network engineers from the participating state agencies. Department of Information Services (DIS) has agreed to implement and manage an empty Windows 2000 root domain that will allow any willing agency to join as a child domain in the multi-agency forest. Agency users can connect and use permitted network resources within the forest. The type of resources (objects) in the Active Directory include domains, organizational units (OUs), sites, users, user groups, computers, printers, file shares, network services, applications, and a gamut of network servers, such as DHCP, DNS, or Exchange servers. All resources can be published for ease of search from anywhere within the forest.

DIS has dedicated resources internally for this project, contracted consulting services with experience and knowledge to build the system, and asked participating agencies to dedicate time from their best network engineers to design, build, and document a single multi-agency forest for the State of Washington.

This endeavor has been pursued because we recognized that Active Directory deployment begins with the creation of a common forest to interconnect the agencies. A forest must be specified when we install our first Windows 2000 Active Directory domain controller. Subsequent domain creation allows the new domain to either join an existing forest or to create a new forest.

Because Windows 2000 doesn't support forest pruning or merging, forest restructuring is a paramount effort.   If an agency creates its own forest, and then later decides to interconnect it to the state multi-agency forest, the agency's own forest must be torn down and rebuilt. Users and network resources from all domains in the agency's own forest must be migrated to the multi-agency forest. There are rumors of ways to interconnect forests via third party tools, and perhaps in later releases of the operating systems, but, those tools and systems don't exist now and the future development, release, robustness, and cost of these technologies is, to say the least, uncertain.

With the multi-agency forest and naming conventions and standards, there will be an easy way to find network resources throughout the State, while maintaining and building onto our Global Address List (GAL) for mail lookup as technology moves ahead.

Why Naming Conventions and Standards?

Windows 2000 Active Directory hosts and manages all resources in the internal local area networks. There can be many types of resources in an Active Directory, including users, computers, printers, file shares, etc. Naming conventions and standards serve three critical functions:

First, well-defined naming conventions fulfill the technical requirements of Active directory and reduce naming conflicts. Some functional areas within Active Directory call for unique attributes to be placed on the directory objects. In one scenario, some characters are reserved for the Active Directory Service and should not be used as a part of the user login names. Restrictions like these should also be clearly defined as standards.

In another scenario, all User Principle Names (UPNs) within a directory forest must be unique. If two users from two state agencies have matching legal names, then the naming conventions adopted must define a strategy to generate two unique UPN names for these different users, possibly embedding the agency names to differentiate. Without such conventions, when the domain administrators from each agency create the users independently, they could potentially use the same UPN causing conflicts. If the user objects are created at different times, Active Directory will prevent the second operation from succeeding. If the user objects are created concurrently, then the conflict will be detected after the replication cycle completes. Such conflicts may be reduced, if sound naming conventions are in place.

Second, naming conventions help users to locate network resources and increase search effectiveness. Active Directory brings the agencies together into a single enterprise, and creates an infrastructure for the users to better utilize network resources. The Directory Service provides a publishing framework where users can effectively search and connect to a resource without knowing the resource's actual physical path and network location. For example, if you wanted to access a document on a file server at the Department of Transportation, by following the naming convention, you could browse to the correct server just by recognizing the name of the server and its function.

Third, a good naming conventions scheme will increase network management efficiency, and reduce troubleshooting efforts. When the names of the resources reflect the type of resources and their ownerships, administration of the resources become easier. For example, when a server experiences problems, by the server name reported the monitoring staff can quickly identify whether it's a mission-critical Exchange gateway failure that could delay or stop all agencies' Internet message relay or it is a departmental print server down so immediate printings are affected.

Characteristics of Naming Conventions and Standards

To allow an organization to build for the future, the first consideration in implementing Windows 2000 should be establishing a set of specific, defined naming conventions and standards. Implementing consistent naming standards throughout the forest, regardless of the number of trees, will allow the greatest flexibility to merge or rearrange the directory structure in the future. Names used as standards must have the following characteristics:

Names should have consistent spelling, capitalization and punctuation.

Without consistent naming conventions, it's very difficult to apply generic search filters across the forest. If different agencies adopt different naming conventions, users have to learn the naming conventions applicable to the agency. (Directories are rarely browsed.)

Consistency is key to finding resources in the Active Directory. A search result set can be reduced to a manageable size if search criteria are provided and the criteria effectively filter out undesired resources.

Consistent names reduce the time required to train users as they move from one agency to another agency. Consistent names also make it easier to build automated scripts for resource management, and therefore reduce the cost of network administration.

For readability the case of the characters is alternated in each part of the name. The first part is capitalized the next part is lower case, then back to upper case for the third part of the name.

Names should follow Internet based standards and best practices. When specialized characters are used, they can conflict with reserved characters for Active Directory and other products and tools.

Specialized characters should be avoided, whenever possible.

Names should be user friendly. Postal codes known only to the mail delivery person won't be an effective representation of departments.

Names are intended to be read by users and system administrators. Therefore, the names should be simple and correspond to names that users readily recognize. The best way to judge whether a name meets this characteristic is to ask, can a new employee remember the names?

Names should incorporate future growth. With Windows NT 4.0, the User Logon Name is used to logon to a computer. Some agencies use the first name of a user as the

User Logon Name. The practice worked well because the domains were confined within a single department or office area where there are no duplicated first names. The same naming convention will not work well to define the UPN's within Windows 2000, because chances are, many employees will have the same first names across state agencies.

The User object requires a User Principal Name (UPN) attribute that must be unique throughout the forest, while the User Logon Name attribute of the User object needs only to be unique within its domain.

Names should withstand time. Ad-hoc naming practices are not desirable. For example, when John installed a NT server several years ago in the accounting department, he called it JOHNSERV. Now John is gone, and the server is still named after him. Another naming pitfall is labeling resources with a software version number or with the word *new* in the ID. Names like SERV311 or NEWSERV can quickly become outdated.

To reduce management overhead, Active Directory objects should remain relatively static and their attributes evolve slowly. It's a good practice to name objects such that the names will remain valid for an extended period of time. "Will the name still be applicable in three years?' is a good test to verify the longevity of a name.

Names should capture the purpose of the resource. Many people like to use "cute" names for resources, like CALVIN, HOBBES, SNOOPY, ELVIS, and so on. The problem with cute names is that they usually have no meaning to users at other locations trying to access the resource. This also creates a problem for a new or backup person administering and supporting the object, who is trying to quickly understand the environment.

Names should be created to help understand the purpose of the resource. ACCTSQL is a better name for the SQL Server used by the Accounting department than the name ACCT. Ask this question, can the type of the resource be determined based on its name?

Recommendations

The Windows 2000 Development Group recommends the following:

❑   Efforts should be made to communicate the business values of such naming conventions. When the reasons behind naming conventions and standards are understood they are more likely to be followed. A good set of naming conventions and standards can thus become a powerful asset to the organization as Windows 2000 is deployed within the department and throughout the enterprise.

Windows 2000 Names

Worldwide Standard Internet Characters

Presently there are many objects that are resources on our various networks with names that consist of characters that are outside of the Standard for Internet Characters Outlined in RFC 1123.

As we move forward we will be exposing these diverse objects for use by applications that have been written to support the standards. Characters outside of the standards will not be supported by these applications.

The recommended solution for a homogeneous environment is to use only the standard Internet characters for naming Computers and Users for backwards compatibility with older versions of DNS and legacy applications:

- A-Z, a-z, 0-9
- No spaces or other characters not listed above including:
- " / \ [ ] : ; | = , + * ? < > - _ ! @ # $ % ^ & * ( ) { } ~ `

(There are some exceptions to this rule such as Groups, OUs, and GPOs)

This standard is recognized worldwide. So as we move toward the multi-agency forest environment there will be commonality in the ability for applications to support communication.

DNS Names and Net Bios Names

Network resources in the present Windows NT 4.0 environment are named using Windows Network Basic Input/Output System (Net Bios) names. A Net Bios name is a single string of characters limited to fifteen (15) characters in length; an example is GA1WKEXEC180 for a computer.

Moving forward, Windows 2000 Active Directory uses Domain Naming Service (DNS) for its name service. Each resource in the Active Directory has a DNS name that is a concatenation of the Net Bios name of the resource, with the addition of the DNS domain name as a suffix. For a computer with a Net Bios name of GA1WKEXEC180 in the GA.WA.LCL domain, the DNS name of the computer is then GA1WKEXEC180.GA.WA.LCL. The DNS name of the resource is unique within a forest. To maintain background compatibility, each network resource also has a Net Bios name, and the Net Bios name must be unique in the domain where the resource lies.

The following table is a comparison of Net BIOS and DNS names.

	Net BIOS computer name	**DNS computer name**
Type	Flat	Hierarchical
Character restrictions	Unicode characters, numbers, white space. Symbols: ! @ # $ % ^ & ') (. - _ { } ~	Same as for Net BIOS except no white space permitted. Period (.) has special reserved meaning.
Maximum length	15 character bytes	63 octets per label. 255 octets per fully qualified domain name (FQDN).
Name service	Windows Internet Name Service (WINS) Net BIOS broadcast	Domain Name System (DNS) service

Many State agencies have written or purchased applications that use Net Bios names to address resources on the network. One of the proposed naming convention requirements is to prefix each resource name with an agency's identifier. This requirement will necessitate a name change for the object. Therefore, the Development Group recommends renaming resources on the network as they are moved into the forest, using a standard naming convention to provide consistency in lookup throughout the forest. This will help users, developers, and applications quickly find the intended resource.

Multi-Agency Naming Convention Syntax

To distinguish between required standard, optimal, and alternative for naming conventions, the following format is used in this section:

<u>Required</u>
All items in this document that are a requirement for being a part of the multi-agency forest will be in bold face and underlined. While all other items are at the agency's discretion (optimal) should be followed unless an overriding business need exists.

(Optimal)
All items that are thought of as best practice or optimal conventions shall be displayed in parenthesis. Use of these items is highly recommended.

{Alternative}
Items in which there are standardized choices shall be displayed in brackets.
i.e. {Choose this one, or this one, or the other.}

<Variables>
All items contained in < > symbols are considered VARIABLES.

Following are the requirements and recommendations for the Naming Convention syntax in naming different elements in the Active Directory. If your domain name is less than five characters, or if you choose to ***<u>not</u>*** use Location ID (refer to Appendix B – Location ID's), you may not substitute other characters in their place.

Requirements

**The following naming conventions are REQUIRED to participate in the Forest
listed in the recommended order of implementation.**

Forest

The name of the multi-agency Forest Root Domain is **WA.LCL.**

Domains

A NT 4.0 domain is identified by its Net Bios domain name. In NT 4.0, domains are
peers to each other, and do not have a hierarchy. In order to connect to a domain,
users or applications must either rely on the NT Browser service to browse the
network, or supply the exact domain name.

In Windows 2000 Active Directory, a domain is identified by its DNS name. For
backward compatibility, a domain also has a Net Bios domain name. DNS provides a
hierarchical namespace; and domains form parent-child relationships. The name of
the parent domain is prefixed with the Net Bios name of the child domain to form the
DNS name of the child domain. An example of a parent domain DNS name is
GA.WA.LCL, and an example of a child domain DNS name is
GALegal.GA.WA.LCL.

Each agency has a single top-level parent domain, which is a child domain to the
forest root domain. Agencies can create additional child domains to support agency
operations.

As applications are developed to use the forest infrastructure for name resolution,
developers will be provided with the forest hierarchy and an explicit known list of
domains that are, or will eventually be a part of the forest.

Element	Convention	Purpose	Example

Agency's Top Level Domain (child of the root)	**<u><AgencyID></u> + 1**
	• Use the standard AgencyID (referenced in appendix A). If your NT 4 Domain is already named after your Agency, it may be necessary to add the number 1 after the AgencyID to differentiate it from your NT 4 Domain Name. In this instance the
		To have uniformity in the Domain Naming Convention, that is meaningful to the Forest
		
		The number 1 identifier designates the Domain as the Agency's Top Level Domain.
			Net Bios name:
			  GA
			  DIS1
			
			DNS name:
			  GA.WA.LCL
			  DIS1.WA.LCL

Element	Convention	Purpose	Example
	number 1 is the only option. • If your Agency ID is not represented in the list (in Appendix A), or if you would like to use another four character, or less designation as your Agency ID, you may submit a proposal to the Multi-Agency Forest Infrastructure Committee for approval. The designation must be 4 letters or less and must all be capitalized.		
Agency's sub-Domain (child)	**<AgencyID> + <Child Domain Name>** The name of the Child Domain should reflect a numeric value or its purpose (Do not use the number 1 for **<Child Domain Name>**) Prefix the selected name with the Agency ID For the <Child Domain Name>, use a numeric v 2, 3 ,4 ect. or lower case letters. •	For recognition of where the Domain belongs.	GAlegal.GA.WA. LCL LNI2.LNI1.WA. LCL
Test Domain	<AgencyID> + <Child Domain Name> +"T" All test domain names should end with T •	To uniquely identify Test Domains. Test domains will not be connected to the WA.LCL root.	DISipsecT DISipsecT.DIS. WA.TST

Sites, Site Connectors and Links

Site related Active Directory objects include sites, site connectors, site links and subnets.

In time, the number of objects will exceed hundreds. Careful consideration of how these objects are named will not only aid in troubleshooting replication problems, but is imperative in planning, scheduling, and maintaining replication for the forest and in some cases aiding in the understanding of what the object is doing.

Element	Convention	Purpose	Example
Sites	• **<AgencyID> + <Location ID> + <####>** **####** Represents, and up to four, numbers to be defined by each agency. You may **not** use only one number designation when defining this field; if a single digit, it should be prefixed with a zero. See Appendix B location ID	To identify Site Locations and Ownership in Site Administrative tools.	GA1oly0001
Site Links Name - Remote	• "**W**" + *<WAN circuit ID>* + "**-**" + *<Start time>* + *<End Time>* + "**C**" + *<Cost factor>* + *<AgencyID>*	This allows the individuals responsible for managing replication to see: ▪ What replication is occurring over the	W3QEDA96264- 05000700C100DFI W04QEDA350022- 01000700C100DSHS

Element	Convention	Purpose	Example
		occurring over the physical circuits (WAN links) that are often shared by agencies ▪ The available and/or over-lapping times that replication is occurring on that WAN link ▪ The cost or topology associated with the site link ▪ The agency (domain) responsible for creating and managing the link	W3QEDA96264-19002200C001GA
Site Links Name - Local	• **"L" + <StartTime> + <End Time> + "C" + <Cost Factor> + <AgencyID>**	• This allows the individuals responsible for managing replication to see: • The available and/or over-lapping times that replication is occurring on that link • The cost or topology associated with the site link • The agency (domain) responsible for creating and managing the link	L17:00-18:00C001GA
Site Connectors	**<Bridgehead Server > + "to" + <Bridgehead Server>** ▪ Name connector objects to depict the bridgehead servers that are logically connected and the direction that replication occurs over these connection objects	Helpful in understanding what the connector object is actually doing.	WAdc01toGAdc01 LNIgcTUM01toLNIg cSEA01

Servers (Windows 2000)

This requirement applies only to Windows 2000 Servers. Windows 2000 server names, just as with NT4 server names, must be unique, and no more than 15 characters in length. They should adhere to the following standards:

Element	Convention	Purpose	Example
Server	**<Domain> + <FunctionID> + <LocationID> + <Agency Defined>** **Agency Defined** represents five alpha characters to be defined by each agency. If your server is used for more than one function, choose only one **FunctionID** in naming your server. Use codes from the Location-ID's Appendix. Server name is limited to no more than 15 characters in length. ▪	Has identifiable name that can be used to determine Domain ownership, service functionality and location of the Server. .	DSHSgcOLY0001 DSHSgcOLY0001A LNI1gcOLY01CPV W

Group Policy Objects (GPOs)

Element	Convention	Purpose	Example
GPOs	**<Domain> + " - " + <Policy Functional Description>** Policy Functional Description is text that describes the function of the Policy.	To have meaningful names of GPOs so that policy management is simplified.	DIS - Domain GPO for restricting logon hours for temporary workers

Users

Some attributes are required fields that must be completed for all user accounts. Consistent spelling, capitalization and punctuation are critical, as these fields may be used to search for users within the directory and/or to construct address book views.

UPN prefix and SAM account are the same.

Element	Convention	Purpose	Example
User Logon (SAM Account) Name	▪ Add "!" in front of disabled accounts ▪ Prefix Vendor names with v- ▪ Service account format: **"Svc"+<Application>+<Agency #>**	v- distinguishes regular employees with vendors. Svc- identifies that it's a special account for service	JJD001 JJD002 SvcWBDIS

Element	Convention	Purpose	Example
User Principle Name (UPN)	▪ **<User Name> + @<Fully Qualified Domain Name>**	Used to fully uniquely identify the user account in the forest.	JJD@DIS.WA.LCL
Display Name	**<Last Name> + <First Name> + "(" + <Middle Initial> + <Agency ID> + ")"** or **<Last Name> + <First Name> + "(" + <Middle Initial> + <Agency ID > + "/" + <Division> + ")"**	Used to identify the full name of the owner of the logon account.	Ditto, John (DIS) Ditto, John J. (DIS) Ditto, John (DIS/TSD) Ditto, John J. (DIS/TSD)
Full Name	**<Last Name> + <First Name> + "(" + <Middle Initial> + <Agency ID> + ")"** or **<Last Name> + <First Name> + "(" + <Middle Initial> + <Agency ID> + "/" + <Division> + ")"**	Used to identify the full name of the owner of the logon account.	Ditto, John (DIS) Ditto, John J. (DIS) Ditto, John (DIS/TSD) Ditto, John J. (DIS/TSD)

Groups

There are 3 group types in Active Directory, (Universal, Global, and Local Groups). Each of these groups serves a different purpose. Please consider the replication implications of using Universal Groups.

Each of the 3 group types can serve 2 different functions. They can either be Security Groups, or Distribution Groups. Be aware of the intended function of the group that you are creating, and combine your group functions were possible.

i.e. there are 25 people in the "Front Office" Security Group, which are grouped together for the purpose of accessing common printers and files needed by those people. Generally, if all of those people work on the same types of tasks, you may need to send every member of that group E-mail. Instead of creating redundant groups, you can "Mail Enable" your Security Group, and give it an E-mail address, and your Security Group serves two functions.

Element	Convention	Purpose	Example
Universal Group	Start with **U-<Group Type> + <Domain> + <description of group purpose>**	Specifically identifies group type in the Directory Administration Tool as a Universal Group.	U-S-GA Front Office U-D-DIS Front Office
Global Group	Start with **G-<Group Type> + <Description of group purpose>**	Specifically identifies group type in the Directory Administration Tool as a Global Group.	G-S-GA Front Office G-D-GA Front Office
Local Group	Start with **L- + <Description of group purpose>**	Specifically identifies group type in the Directory Administration Tool as a Local Group.	L-S-GA Front Office L-D-GA Front Office
	Group Types		
Security Group	**S**	Defines group type as a Security Group	U-S-GA Front Office G-S-GA Front Office

Element	Convention	Purpose	Example
Distribution Group	**D**	Defines Group type as a Distribution Group.	U-D-GA Front Office L-D-GA Front Office

Workstations

Element	Convention	Purpose	Example
Workstations	• **<Domain>** + **<XXXX…X>** xxxxx Represents a minimum of two, and up to the maximum number of characters for a computer which is 15. These characters must be in accordance with the characters outlined on page 10.	Has identifiable name that can be used to determine Domain ownership and location of the workstation.	GA1wkEXEC180
Below are some recommendations for naming workstations			
Workstations (WK)			GA1wkEXEC180
Handheld Device (HH)			GA1hhDCF03
Mobile Computing Device (MC)			GA1mcEAS05
Thin Client (TC)			GA1tcOLY207
Laptop Computer (LT)			GA1lt99

Printers

You can publish shared printer in the Active Directory.

One aspect of Printer that requires careful naming planning is the printer location attribute. Printer location tracking in Windows 2000 allows users to search for and find printers at their location or another specified location, according to attributes assigned to printers.

Element	Convention	Purpose	Example
Printer Share Name	• **<Domain>** + **<XXXX…X>** xxxxx Represents a minimum of two, and up to twelve characters including the Domain ID, characters to be defined by each agency. • Do not exceed 12 characters when naming shares due to issues with legacy clients being unable to access the share.	Has identifiable name that can be used to determine Domain ownership and location of the printer	GA1pr01 GA1pr001 GA1pr0001
Published Printer Name	Default is the Share Name of the Printer	Lists Printer availability into the Directory for searching.	GA1pr01 GA1pr001

Element	Convention	Purpose	Example
			GA1pr0001
Printer Location Names	• **<Domain> + <Physical Location>** • Names for printer locations should describe the actual physical location of the printer for simpler searching.	Used to search the Directory and find printers in a specific Domain and area.	GA Main Building 3rd floor.
Printer Description	Define functionality of Printer.	Gives a description of printer location or capability so that users that are searching the Directory can get specific information about the printer.	HP LaserJet 4000 located at DIS 3rd floor, black and white only.

Recommendations

The following are optimal recommendations for Naming Conventions for Domain Objects.

Organizational Units (OUs)

Organization Units (OUs) are Active Directory containers. OUs group network resources into logical units in order to simplify management and provide delegation of administration.

OUs can be modeled after the business functions, or to reflect the departments' geographic locations, or a combination of both. OU names should represent the portion of the organization being managed. Also, OUs can be lengthy enough to put a description of the OU function in the name for ease of management.

Element	Convention	Purpose	Example
Business function-based OUs	• Naming corresponds to the agency's business divisions.	Identify the OU based on Business function	Accounting Personnel
Geographical-based OUs	• Naming corresponds to the agency's location.	Identify the OU based on location and Business function	BLDG 2300
Business function and Geographical based OUs	• The second level of OUs should represent the government business function. • The top level OUs could be named by location.	Combines these two OU administration types	Accounting Personnel, BLDG 2300

File Shares

In Active Directory, you can publish any shared folder that can be accessed by using a UNC name. An Active Directory enabled client can search and locate the object that represents the shared folder, and then connect to the shared folder.

Element	Convention	Purpose	Example
File Share Name	Do not exceed 12 characters.	Due to issues with legacy clients being unable to access the share, share names should be kept at 12 characters or less.	commonapps

Conclusion

As we move towards an enterprise view of the State of Washington's information system, we as individual information technology organizations will begin to feel a commonality of goals and objectives in communication, application consolidation, and reduction in replication of data. The efficiencies achieved through cooperation and unification will result in reduced administration, shortened latency in obtaining information, and an increase in the dependability of current and accurate information.

Only through naming conventions and standards established by a consortium of agencies will the enterprise information system provide the easy development of intra-agency software, lookup of objects for communication, and intended identification of those objects.

Appendix A – Agency ID's

Multi-Agency Forest Agency ID's

Agency Title	Agency ID	Agency #
Accountancy, State Board of	ACB	165
Actuary, Office of the State	OSA	35
Administrative Hearings, Office of	OAH	110
Administrator for the Courts, Office of the	OAC	55
African-American Affairs, Washington State Commission on	CAA	119
Agriculture, Department of	AGR	495
Alfalfa Seed Commission	ALF	501
Apple Advertising Commission	AAC	500
Arts Commission, Washington State	ART	387
Asparagus Commission	ASPA	506
Attorney General, Office of the	ATG	100
Auditor, Office of the State	SAO	95
Barley Commission	BRLY	527
Bates Technical College	BATE	695
Beef Commission	BEEF	502
Bellevue Community College	BCC	627
Bellingham Technical College	BTC	695
Big Bend Community College	BBC	629
Blind, Department of Services for the	DSB	315
Blind, State School for the	SFB	351
Blueberry Commission	BLUE	503
Bulb Commission	BULB	505
Cascadia Community College	CCC	634
Caseload Forecast Council	CFC	101
Central Washington University	CWU	375
Centralia College	CEC	632
Clark College	CLC	635
Clover Park Technical College	CPTC	696
Columbia Basin Community College	CBC	639
Columbia River Gorge Commission	CRG	460
Community and Technical Colleges, State Board for	CTC	550

Community, Trade, and Economic Development, Department of	CTED	103
Conservation Commission, State	SCC	471
Convention and Trade Center, State	CTR	550
Corrections, Department of	DOC	310
County Road Administration Board	CRAB	406
Court of Appeals	COA	48
Cranberry Commission	CRAN	507
Criminal Justice Training Commission, Washington State	CJT	227
Dairy Products Commission	DPC	510
Deaf, State School for the	SFD	353
Dry Pea and Lentil Commission	DPL	512
Eastern Washington University	EWU	370
Ecology, Department of	ECY	461
Economic and Revenue Forecast Council	ERFC	104
Economic Development Finance Authority, Washington	EDFA	106
Edmonds Community College	EDC	610
Education, State Board of	SBE	345
Egg Commission	EGG	514
Employment Security, Department of	ESD	540
Environmental Hearings Office	EHO	468
Everett Community College	EVC	605
Financial Institutions, Department of	DFI	102
Financial Management, Office of	OFM	105
Fish and Wildlife, Department of	DFW	747
Forensic Investigations Council	FIC	167
Fruit Commission	FRUI	515
Fryer Commission	FRY	520
Gambling Commission, State	GMB	117
General Administration, Department of	GA	150
Governor, Office of the	GOV	75
Grays Harbor College	GHC	648
Green River Community College	GRC	649
Growth Management Hearings Board	GMHB	476
Health, Department of	DOH	303
Health Care Authority, State	HCA	107
Higher Education Coordinating Board	HECB	343
Highline Community College	HCC	652
Hispanic Affairs, Washington State Commission on	CHA	118
Historical Society, Eastern Washington State	EWH	395
Historical Society, Washington State	WHS	390

Hop Commission	HOP	522
Horse Racing Commission, Washington	HRC	185
House of Representatives	REP	11
Housing Finance Commission, Washington State	HFC	148
Human Rights Commission	HUM	120
Indeterminate Sentence Review Board	SRB	250
Indian Affairs, Governor's Office of	INA	86
Industrial Insurance Appeals, Board of	BIIA	190
Information Services, Department of	DIS	155
Insurance Commissioner, Office of the	INS	160
Investment Board, State	SIB	126
Joint Legislative Audit and Review Committee	JLAR	14
Joint Legislative Systems Committee	JLS	38
Judicial Conduct, Commission on	CJC	50
Labor and Industries, Department of	LNI	235
Law Library, State	LAW	46
Legislative Evaluation and Accountability Program Committee	LEAP	20
Legislative Transportation Committee	LTC	15
Library, State	LIB	385
Licensing, Department of	DOL	240
Lieutenant Governor, Office of the	LTG	80
Liquor Control Board	LCB	195
Lottery Commission, State	LOT	116
Lower Columbia College	LCC	657
Marine Employees' Commission	MAR	408
Military Department	MIL	*245
Emergency Management Division, Military Department	EMD	*245e
Minority and Women's Business Enterprises, Office of	MWBE	147
Mint Commission	MINT	528
Municipal Research Council	MRC	144
Natural Resources, Department of	DNR	490
Olympic College	OLC	662
Outdoor Recreation, Interagency Committee for	IAC	467
Parks and Recreation Commission, State	PARK	465
Patrol, Washington State	WSP	225
Peninsula College	PEC	665
Personnel Appeals Board	PAB	122
Personnel, Department of	DOP	111
Pierce College	PIE	637
Pilotage Commissioners, Board of	BPC	205

Pollution Liability Insurance Program, Washington	PLI	462
Potato Commission	POTA	525
Presidential Electors, United States	USP	157
Public Disclosure Commission	PDC	82
Public Employment Relations Commission	PERC	275
Public Instruction, Superintendent of	SPI	350
Public Printer	PRT	130
Red Raspberry Commission	RASP	529
Redistricting Commission	RDC	91
Renton Technical College	RTC	693
Retirement Systems, Department of	DRS	124
Revenue, Department of	DOR	140
Salaries for Elected Officials, Washington Citizens' Commission on	COS	99
Seattle Community College - District 6	SEAC	670
Secretary of State, Office of the	SEC	85
Seed Potato Commission	SEED	530
Senate	SEN	12
Sentencing Guidelines Commission	SGC	325
Shoreline Community College	SHC	672
Skagit Valley College	SVC	674
Social and Health Services, Department of	DSHS	300
South Puget Sound Community College	SPSC	675
Spokane Community College - District 17	SPOK	676
Spokane Intercollegiate Research and Technology Institute	SIRT	377
Statute Law Committee	SLC	40
Strawberry Commission	STRW	526
Supreme Court	SUP	45
Supreme Court Reports, Commission on	SCR	47
Tacoma Community College	TCC	678
Tax Appeals, Board of	BTA	142
The Evergreen State College	TESC	376
Traffic Safety Commission, Washington	STS	228
Transportation, Department of	DOT	405
Transportation Commission	TRC	410
Transportation Improvement Board	TIB	407
Treasurer, Office of the State	OST	90
Tree Fruit Research Commission	TREE	533
University of Washington	UW	360
Utilities and Transportation Commission	UTC	215
Veterans' Affairs, Department of	DVA	305

Volunteer Firefighters, Board for	FIR	220
Walla Walla Community College	WLC	683
Washington State University	WSU	365
Wenatchee Valley College	WVC	686
Western Washington University	WWU	380
Whatcom Community College	WHC	621
Wheat Commission	WHEA	535
Wine Commission	WINE	534
Work Force Training and Education Coordinating Board	WFTE	354
Yakima Valley College	YVC	691

Appendix B – Location ID's

Windows 2000 Location ID's

Revision Date: 1/26/01

City	Abbreviation
ABERDEEN	ABR
AIRWAY HEIGHTS	AIR
ALBION	ALB
ALDERWOOD MANOR	ALD
ALGONA	ALG
ALMIRA	ALM
AMANDA PARK	AMP
ANACORTES	ANA
ARIEL	ARI
ARLINGTON	ARL
ASHFORD	ASH
ASOTIN	AST
AUBURN	AUB
BAINBRIDGE ISLAND	BNB
BATTLE GROUND	BGD
BEAUX ARTS	BXA
BEAVER	BVR
BELFAIR	BLF
BELLEVUE	BLV
BELLINGHAM	BEL
BENTON CITY	BNC
BICKLETON	BIC
BINGEN	BIN
BLACK DIAMOND	BLK
BLAINE	BLA
BONNEY LAKE	BON
BOTHELL	BOT
BREMERTON	BRE
BREWSTER	BRW
BRIDGEPORT	BPT
BRIER	BRI
BRINNON	BRN
BUCKLEY	BUC
BUCODA	BCD
BULLFROG	BUL

Revision Date: 1/26/01

City	Abbreviation
BURIEN	BUN
BURLINGTON	BUR
CAMANO ISLAND	CMO
CAMAS	CAM
CAMP MURRAY	CPM
CARBONADO	CRB
CARNATION	CRN
CARSON	CAR
CASHMERE	CSH
CASTLE ROCK	CRK
CATHLAMET	CTH
CENTRALIA	CEN
CHEHALIS	CHE
CHELAN	CLN
CHENEY	CHN
CHEWELAH	CHW
CHIMACUM	CMM
CLALLAM BAY	CBY
CLARKSTON	CLK
CLE ELUM	CLE
CLYDE HILL	CLY
COLFAX	COF
COLLEGE PLACE	CLP
COLTON	CLT
COLUMBIA	CLB
COLVILLE	COL
CONCONULLY	CNC
CONCRETE	CON
CONNELL	CNL
COPALIS	COP
COSMOPOLIS	CPS
COULEE CITY	COU
COULEE DAM	COD
COUPEVILLE	CPV
CRESTON	CTN
CUSICK	CUS
DARRINGTON	DAR
DAVENPORT	DAP

Revision Date: 1/26/01

City	Abbreviation
DAYTON	DAY
DEEP HARBOR	DPH
DEER PARK	DPK
DEMING	DEM
DES MOINES	DMS
DU PONT	DUP
DUVALL	DUV
EAST WENATCHEE	EWC
EASTON	EST
EATONVILLE	EAT
EDMONDS	EDM
ELECTRIC CITY	ELC
ELLENSBURG	ELL
ELMA	ELM
ELMER CITY	EMC
ENDICOTT	END
ENTIAT	ENT
ENUMCLAW	ENC
EPHRATA	EPH
EVERETT	EVR
EVERSON	EVE
FAIRFIELD	FRF
FALL CITY	FLC
FARMINGTON	FRM
FEDERAL WAY	FED
FERNDALE	FND
FIFE	FIF
FIRCREST	FIR
FORD	FRD
FORKS	FKS
FORT LAWTON	FTL
FORT STEILACOOM	FTS
FRIDAY HARBOR	FHR
GARFIELD	GAR
GEORGE	GEO
GIG HARBOR	GHB
GLENWOOD	GLW
GOLD BAR	GDB

Revision Date: 1/26/01

City	Abbreviation
GOLDENDALE	GLD
GORST	GST
GRAHAM	GRH
GRAND COULEE	GRC
GRANDVIEW	GRD
GRANGER	GRG
GRANITE FALLS	GRF
GRAPEVIEW	GPV
GRAYS RIVER	GRV
GREEN ACRES	GRA
HALLS LAKE	HAL
HAMILTON	HAM
HANFORD	HAN
HARRAH	HAR
HARRINGTON	HRN
HARTLINE	HTL
HATTON	HAT
HOODSPORT	HPT
HOQUIAM	HOQ
HUMPTULIPS	HMT
HUNTS POINT	HTP
HYAK	HYK
ILWACO	ILW
INDEX	IND
IONE	ION
ISSAQUAH	ISQ
KAHLOTUS	KAH
KALAMA	KAL
KELSO	KEL
KENNEWICK	KEN
KENT	KNT
KETTLE FALLS	KTF
KIRKLAND	KIR
KITTITAS	KIT
KRUPP	KRP
LA CENTER	LCN
LA CONNER	LCR
LA CROSSE	LCS

Revision Date: 1/26/01

City	Abbreviation
LACEY	LCY
LAGRANDE	LAG
LAKE FOREST PARK	LFP
LAKE QUINAULT	LKQ
LAKE STEVENS	LAS
LAKEWOOD	LAK
LAMONT	LMT
LANGLEY	LNG
LATAH	LAT
LEAVENWORTH	LVN
LILLIWAUP	LIL
LIND	LIN
LITTLEROCK	LRK
LONG BEACH	LON
LONGVIEW	LGV
LOOMIS	LOO
LYLE	LYL
LYMAN	LYM
LYNDEN	LDN
LYNNWOOD	LYN
MABTON	MAB
MALAGA	MAL
MALDEN	MLD
MANCHESTER	MCH
MANSFIELD	MFD
MAPLE VALLEY	MAV
MARBLEMOUNT	MBM
MARCUS	MRC
MARYSVILLE	MAR
MATTAWA	MAT
MCCLEARY	MCY
MCNEIL ISLAND	MNI
MEDA	MDA
MEDICAL LAKE	MED
MEDINA	MDN
MENLO	MLO
MERCER ISLAND	MCI
MESA	MSA

Revision Date: 1/26/01

City	Abbreviation
METALINE	MTL
METALINE FALLS	MLF
MIDWAY	MID
MILL CREEK	MIL
MILLWOOD	MWD
MILTON	MLN
MOCLIPS	MOC
MONROE	MON
MONTESANO	MSO
MORTON	MTN
MOSES LAKE	MSL
MOSSYROCK	MSR
MOUNT VERNON	MTV
MOUNTLAKE TERRACE	MLT
MOXEE	MOX
MUKILTEO	MUK
NACHES	NAC
NACHOTTA	NCH
NAPAVINE	NPV
NASELLE	NAS
NEAH BAY	NEA
NESPELEM	NES
NEWMAN LAKE	NWL
NEWPORT	NEW
NOOKSACK	NOO
NORDLAND	NDL
NORMANDY PARK	NPK
NORTH BEND	NBD
NORTH BONNEVILLE	NBV
NORTHPORT	NPT
OAK HARBOR	OAK
OAKESDALE	ODL
OAKVILLE	OKV
OCEAN PARK	OPK
ODESSA	ODS
OKANOGAN	OKN
OLYMPIA	OLY
OMAK	OMA

Revision Date: 1/26/01

City	Abbreviation
OROVILLE	ORO
ORTING	ORT
OTHELLO	OTH
PACIFIC	PCF
PACKWOOD	PKD
PALOUSE	PAL
PARKER	PKR
PARKLAND	PRK
PASCO	PCO
PATEROS	PAT
PE ELL	PEL
PLYMOUTH	PLY
POMEROY	POM
PORT ANGELES	PTA
PORT LUDLOW	PTL
PORT ORCHARD	PTO
PORT TOWNSEND	PTT
POTLATCH	POT
POULSBO	PLB
PRESCOTT	PRE
PROSSER	PRS
PULLMAN	PUL
PURDY	PUR
PUYALLUP	PUY
QUILCENE	QLC
QUINCY	QCY
RAINIER	RAI
RANDLE	RAN
RAYMOND	RAY
REARDAN	RDN
REDMOND	RED
RENTON	REN
REPUBLIC	REP
RETSIL	RET
RICHLAND	RCL
RICHMOND BEACH	RMB
RIDGEFIELD	RFD
RITZVILLE	RIT

Revision Date: 1/26/01

City	Abbreviation
RIVERSIDE	RIV
ROCHESTER	ROC
ROCK ISLAND	RKI
ROCKFORD	RKF
ROCKPORT	RPT
ROSALIA	ROS
ROSLYN	RSL
ROY	ROY
ROYAL CITY	RYL
RUSTON	RUS
SALKUM	SLK
SAPPHO	SHO
SEA-TAC	SAT
SEATTLE	SEA
SEDRO WOOLLEY	SED
SELAH	SEL
SEQUIM	SEQ
SHELTON	SHE
SILVERDALE	SIL
SKYKOMISH	SKY
SNOHOMISH	SNH
SNOQUALMIE	SNO
SNOQUALMIE PASS	SNP
SOAP LAKE	SPL
SOUTH BEND	SBD
SOUTH CLE ELUM	SCE
SOUTH PRAIRIE	SPE
SPANAWAY	SPA
SPANGLE	SPG
SPOKANE	SPO
SPRAGUE	SPR
SPRINGDALE	SPD
ST. JOHN	STJ
STANWOOD	STN
STARBUCK	STR
STEILACOOM	STL
STEVENS PASS	STP
STEVENSON	STV

Revision Date: 1/26/01

City	Abbreviation
SULTAN	SUL
SUMAS	SMA
SUMNER	SMN
SUNNYSIDE	SSD
TACOMA	TAC
TAHOLAH	TAH
TEKOA	TEK
TENINO	TEN
THORNTON	THN
TIETON	TTN
TOLEDO	TOL
TONASKET	TON
TOPPENISH	TOP
TOUCHET	TOU
TOUTLE	TTL
TROUT LAKE	TLK
TUKWILA	TUK
TUMWATER	TUM
TWISP	TWS
UNION GAP	UNG
UNIONTOWN	UNT
UTOPIA	UTP
VADER	VAD
VANCOUVER	VAN
VANTAGE	VTG
VASHON	VAS
WAITSBURG	WTB
WALLA WALLA	WAL
WALLULA	WLU
WAPATO	WTO
WARDEN	WAR
WASHOUGAL	WGL
WASHTUCNA	WTC
WATERVILLE	WAT
WAVERLY	WAV
WENATCHEE	WEN
WEST RICHLAND	WRC
WESTPORT	WPT

Revision Date: 1/26/01

City	Abbreviation
WHATCOM	WTM
WHITE CENTER	WHC
WHITE SALMON	WHS
WHITE SWAN	WSW
WHITMAN	WHI
WILBUR	WLB
WILKESON	WKS
WILLAPA	WIL
WILLARD	WLD
WILSON CREEK	WCR
WINLOCK	WLK
WINSLOW	WIN
WINTHROP	WNT
WOODINVILLE	WDV
WOODLAND	WDL
WOODWAY	WWY
YACOLT	YAC
YAKIMA	YAK
YARROW POINT	YWP
YELM	YEL
ZILLAH	ZIL

Appendix C– Server Function IDs

Global Catalog (gc)	GA1gcOly01A
Domain Controller (dc)	
File (fl)	GA1flOlyA
Print Server (ps)	GA1psOLY001
Web (wb)	GA1wbOLY1501
Proxy (px)	GA1pxOly1500A
Routing and Remote Access (ra)	GA1raOly1501A
Application (ap)	GA1apOly1503
Component (cm)	GA1cmOly150B
Terminal (tm)	GA1tmOly01
Certificate Authority (ca)	GA1caOLYA
Database (db)	GA1dbOly01
E-mail (mx)	GA1mxOly01
Multimedia (mm)	GA1mmOly01
SMS (sm)	GA1smOly01
Network Attached Storage (na)	GA1naOly01
Storage Area Network (sa)	GA1saOly01
Backup Server (bk)	GA1bkOly01
CD Tower (cd)	GA1cdOly01
Utilities (ut)	GA1utOly01
Security Blockout (xx)	GA1xxOly01
General Purpose (gp)	GA1gpOly01
DFS (df)	GA1dfOly01
DHCP (ip)	GA1ipOly01
Fax Server (fx)	GA1fxOly01
Scan Server (sc)	GA1scOly01

Appendix D– Future Considerations

1. For Exchange 2000 in Active Directory, every Exchange Mailbox requires an Active Directory User Object. For shared Mailboxes and Calendars in Exchange 5.5 that there are currently no User Objects in the NT 4.0 Domains, there will need to be a User Object Created for it in Active Directory before the resource can be moved over to Exchange 2000. There needs to be a consistent method of naming resource Mailboxes and Calendars to ensure that the User Objects can be quickly and easily identified and managed in the directory. Since Active Directory is a Meta directory, information like conference rooms, and overhead projectors should be listed as attributes of a user or resource. Some naming conventions for the attributes to consider are:

   - Resource ID is:
     - **RE** (resource) for items like overhead projector, white board, etc.
     - **FA** (facility) for conference rooms, hearing rooms, etc.
     - **MI** (miscellaneous) for other
     - **PG** (pager) for pagers
     - **FX** (facsimile) for fax addresses
     - **VE** (vendor) for vendors or agency's customers

Appendix E- Glossary of Acronyms and Terms

(This is a generic glossary of acronyms and terms. Acronyms and terms that do not appear in the main section of this document should be deleted from the Glossary.)

ACL   **Access Control List**
             The part of a security descriptor that enumerates the protections to accessing and the auditing of that accessing that are applied to an object.

API   **Application Programming Interface**
             A set of routines that an application program uses to request carry out lower-level services performed by another component, such as the computer's operating system or a service running on a network computer.

ATM   **Asynchronous Transfer Mode**
             An advanced implementation of packet switching that provides high-speed data transmission rates to send fixed-size cells over broadband LANs or WANs.

BDC   **Backup Domain Controller for NT**
             A computer that receives a copy of the domain's security policy and domain database, and authenticates network logons. It provides a backup in the event the primary domain controller becomes unavailable.

BOOTP   **Bootstrap Protocol**
             A TCP/IP network protocol used to configure network computers. The bootstrap protocol (BOOTP) was originally defined in RFC 951. The latest BOOTP RFC is RFC 1542, which includes support for DHCP.

DFS   **Distributed File System**
             A file management system in which files may be located on multiple computers connected over a local or wide area network.

DHCP   **Dynamic Host Configuration Protocol**
             A protocol and service that offers dynamic configuration of IP addresses and related information. RFC's 1533, 1534, 1541, 1542.

DLL   **Dynamic Link Library**
             An operating system feature that allows executable routines (generally serving a specific function or set of functions) to be stored separately as files with .dll extensions. These routines are loaded only when needed by the program that calls them.

DNS   **Domain Name System**
             A set of protocols and services on a TCP/IP network which facilitates the use of hierarchical name spaces and provides "fully

qualified name" to IP address resolution.

Domains (NT)	**Windows NT/2000 Domains** A Windows NT/2000 domain is a logical grouping of network servers and other computers that share common security and user-account information.
Exchange	**Microsoft Exchange** A messaging-based family of products to work with existing programs and networks to allow users in an organization to exchange and share information efficiently. It provides scheduling, messaging, group information sharing, and forms.
Forrest	**Windows 2000 Forest** A collection of one or more Windows 2000 Active Directory trees, organized as peers and connected by two-way transitive trust relationships between the root domains of each tree. All trees in the forest share a common schema, configuration, and Global Catalog. When a forest contains multiple trees, the trees do not form a contiguous namespace.
Fully Qualified Domain Name	**Fully Qualified Domain Name (FQDN)** The complete DNS name. i.e. Object.child.child.root
FTP	**File Transfer Protocol** A process that provides file transfers between local and remote computers.
GPO	**Group Policy Object** A collection of Group Policy settings. GPOs are the documents created by the Group Policy snap-in. GPOs are stored at the domain level, and they affect users and computers contained in sites, domains, and OUs. Each Windows 2000-based computer has exactly one group of settings stored locally, called the local GPO.
IP	**Internet Protocol** The layer of the TCP/IP protocol stack that routes messages from one Internet addressed location to another.
IPSec	**Internet Protocol Security** An implementation of the Internet Engineering Task Force's IP Security Protocol in Windows 2000. It supports network-level authentication, data integrity, and encryption for safeguarding intranet and Internet communications. Microsoft Windows IP Security provides security for all TCP/IP communications on both sides of an organization's firewall. The result is an end-to-end security strategy that defends against both external and internal attacks. Because Windows IP Security is deployed below the transport level, its security services are transparently inherited by

applications and network managers do not have to deploy and coordinate security one application at a time.

KCC   **Knowledge Consistency Checker**
A service running on all DCs, to ensure that Active Directory replicates properly. It automatically establishes connections between all of the DCs in the same site. A systems administrator may establish additional connection objects, or remove connection objects, but at any point where replication within a site becomes impossible or has a single point of failure, the KCC will step in and establish as many new connection objects as necessary to resume Active Directory replication.

Legacy   **Legacy Clients**
Clients   Legacy clients are computers that are not of the same version of operating system as the latest release.

MMC   **Microsoft Management Console**
A framework for hosting administrative tools, called consoles. A console may contain tools, folders or other containers, World Wide Web pages, and other administrative items. These items are displayed in the left pane of the console, called a console tree. A console has one or more windows that can provide views of the console tree. The main MMC window provides commands and tools for authoring consoles. The authoring features of MMC and the console tree itself may be hidden when a console is in User Mode.

NETBIOS   **Network Basic Input/Output System**
A standard, developed by IBM, which defines the conventions for session layer to transport layer communications. (OSI model).

NOS   **Network Operating System**
An operating system that runs both stand-alone computers and the network. It coordinates the functions of all computers and peripherals in a network. It also provides security for access to data and peripherals in the network.

NT   **Microsoft NT**
A comprehensive network operating system that provides application, file and print services across LAN/WAN's and interoperability with other operating systems.

NTFS   **NT File System**
An advanced Windows file system that supports file system recovery, extremely large storage media, long file names and various features for the POSIX subsystem (Portable Operating System Interface for UNIX). It also supports object-oriented applications by treating all files as objects with user-defined and system-defined attributes.

OU   **Organizational Unit**
An Active Directory container object used within domains. An OU is a logical container into which users, groups, computers, and other OUs are placed. It can contain objects only from its

Parent Domain. An OU is the smallest scope to which a Group Policy Object can be linked, or over which administrative authority can be delegated.

PDC   **Primary Domain Controller for NT**
The first computer named in a NT server domain during installation. It contains a master copy or domain information, validates users, and can act as a file, print, and application server.

PKI   **Public Key Infrastructure**
The term generally used to describe the laws, policies, standards, and software that regulate or manipulate certificates and public and private keys. In practice, it is a system of digital certificates, certification authorities, and other registration authorities that verify and authenticate the validity of each party involved in an electronic transaction.

PPTP   **Point to Point Tunneling Protocol**
A networking technology that supports multiprotocol VPN's, enabling remote users to access corporate networks securely across the Internet by dialing into an Internet Service Provider (ISP) or by connecting directly to the Internet.

PXE   **Pre-boot Execution**
A technology of using a Network Interface Card BIOS to receive a DHCP assigned IP address at computer start-up, and boot the computer to a network resource.

Qos   **Quality of Service**
A set of quality-assurance standards and mechanisms for data transmission, implemented in Windows 2000.

RFC   **Request for Comments**
The official documents of the IETF (Internet Engineering Task Force) that specify the details and specifications included in the TCP/IP protocol suite.

Root   **Root**

The highest or uppermost level in a hierarchically organized set of information. The root is the point from which further subsets are branched in a logical sequence that moves from a broad or general focus to narrower perspectives.

RSVP   **Resource Reservation Protocol**
A signaling protocol that allows the sender and receiver in a communication to set up a reserved highway for data transmission with a specified quality of service.

SAM   **Security Accounts Manager**
The Windows NT Server directory service database holding account and resource information between NT Server PDC and BDC's.

SCSI   **Small Computer System Interface**
A standard, high-speed parallel interface defined by ANSI. A SCSI interface is used for connecting microcomputers to

peripheral devices, such as hard disks and printers, and to other computers and LANs.

TAPI   **Telephony API**
An API used by programs to make data/fax/voice calls.

TCO   **Total Cost of Ownership**
The cost to businesses and organizations of setting up and maintaining computer desktops and complex and far-reaching networked computer systems. Total cost of ownership includes the up-front costs of hardware and software added to later costs of installation, personnel training, technical support, upgrades, and repairs. TCO includes the time non-technical knowledge workers spend helping each other on computer desktops.

Industry initiatives designed to lower the total cost of ownership include centralized network management and administration, as well as hardware solutions in the form of network-based computers with or without local storage and expansion capability.

TCP   **Transmission Control Protocol**
A connection-based Internet protocol responsible for breaking data into packets, which the IP protocol sends of the network.

TTL   **Time To Live**
The time specified for cached information to exist, before the data is flushed from its cache.

VPN   **Virtual Private Network**
A remote LAN that can be accessed through the Internet by using PPTP.

WINS   **Windows Internet Name Service**
A name resolution service based on RFC's 1001, 1002 (NetBIOS Name Resolution) that resolves Windows Networking based computer, application names, service names and other NetBIOS based names to IP addresses in a routed environment.

WMI   **Windows Management Instrumentation**
A management infrastructure in Windows 2000 that supports monitoring and controlling system resources through a common set of interfaces and provides a logically organized, consistent model of Windows operation, configuration, and status.

WSH   **Windows Scripting Host**
A language-independent scripting host for 32-bit Windows platforms.